

LUMBAR PUNCTURE HEADACHE IN RELATION TO AGE OF PATIENT AND REST AFTER PUNCTURE*

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Examination of the cerebrospinal fluid is an essential step in the diagnosis of late syphilis and is also necessary before any treated case of primary or secondary syphilis can be discharged as cured.

The problem of lumbar puncture headache is therefore one of importance in all venereal disease clinics and the adoption of any method of reducing its incidence must be considered. Various procedures for the prevention of headache have been advocated, including the intravenous injection of saline immediately after puncture (Baar, 1920), the intramuscular injection of pituitary extract (Alpers, 1925), the use of small gauge needles (Greene, 1950) or double needles (Gallagher and Campbell, 1954), and even the plugging of the puncture hole with a length of catgut (Nelson, 1930). Some methods are not practical for use in an outpatient clinic and others are not always successful. Dattner (1944), in a summary of some of these methods, concludes: "the variety of measures recommended makes their value extremely doubtful".

Rest.—On the question of rest after puncture, opinions are divided. Series of cases have been reported to show that an immediate return to full activity results in a lower incidence of post puncture headache and Dattner (1944) quotes the suggestion of the Association of Syphilis Clinics that "there is abundant evidence to prove that rest immediately following the puncture has no prophylactic value". However, on the question of allowing activity after lumbar puncture, Stokes, Beerman, and Ingraham (1944) say "not yet recommended".

Many venereologists still suggest some form of rest or modified activity after puncture. This may be done solely because the onset of a severe lumbar puncture headache can be a very frightening experience, even in a forewarned patient, and is even worse if it develops when the patient is away from home. Such an occurrence tends to have an adverse effect on future attendance for treatment and certainly on the patient's reaction to any suggestion for further puncture. In most clinics the facilities

for admission to hospital for lumbar puncture are limited, but, if rest can be shown to reduce the number of post lumbar puncture headaches, it may be offered to those considered most likely to develop the complication. Where no beds are available, such susceptible patients could be strongly advised to return home to bed immediately after the puncture.

The incidence of post lumbar puncture headache in series of cases where the puncture is not followed by any period of rest varies from the extreme of less than 1 per cent. of 2,217 cases (Levin, 1944) to the more usual figures of 15 per cent. of 268 cases (Underwood, 1946), 23.5 per cent. of 127 cases using Dattner needle and 40.5 per cent. of 131 cases using a single needle (Gallagher and Campbell, 1954), and 46 per cent. of 62 cases (Sciarra and Carter, 1952).

Age.—The age of the patient in relation to post puncture headache has been considered by Thorsén (1947). In a control group of 100 cases in a study of spinal anaesthesia he found the following age incidence:

Age (yrs)	Males (per cent.)	Females (per cent.)	Total (per cent.)
Under 29	52.9	62.5	56.0
30 to 50	40.7	54.5	46.9
51 and over	13.3	18.2	15.3

Krueger, Stoelting, and Graf (1951), in a study of spinal anaesthesia, found that in a group of 673 patients "there appears to be an inverse relationship between age and post spinal headache. The greatest incidence of headache occurred in patients under 35 years of age".

Present Investigation

The series reported here comprises 449 lumbar punctures performed in venereal disease clinics by the same operator using a similar technique in each case. The patients are divided into two groups: (A) 345 Servicemen all under 40 years of age, and (B) 104 civilian patients of all ages.

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Technique.—Patients were placed in the left lateral position. A single needle, gauge 20, was introduced into the second or third lumbar interspace and about 6 ml. cerebrospinal fluid was removed. The patient was then rolled over on to the abdomen and rested on the table for a few minutes. After this short rest, Group A (345 Servicemen) walked a short distance back to the ward and remained at rest in bed for at least 18 hrs.

Group B (104 civilians) had to dress and then return to work, or, if the puncture was performed late in the day, return home. No patient was advised to rest in bed.

Incidence of Headache.—Headaches were classified as follows :

Severe (++) , when the headache forced the patient to take to his bed (or necessitated admission to hospital), and was often associated with vertigo, nausea, and vomiting.

Moderate (+) , when the headache was of sufficient severity to cause the patient to leave work or in any way alter normal routine.

These two groups have been classified as post lumbar puncture headaches.

Patients who developed slight headache (\pm), involving no alteration of normal routine, have not been included.

Results

The results are shown in Tables I and II :

TABLE I
RESULTS IN GROUPS A AND B

Group	No. of Patients	Headaches (+ + and +)	Per cent.
A	345	11	3.2
B	104	18	17.3

TABLE II
ANALYSIS OF CASES IN GROUP B BY AGE AND SEX

Sex	Age (yrs)	No. of Patients	Headache Present	
			Number	Per cent.
Male	All ages	85	13	15.3
Female		19	5	26.3
Male	Under 40	34	9	26.5
Female		15	5	33.3
Male	Over 40	51	4	8.0
Female		4	0	0

Conclusions

A markedly higher incidence of headache occurred in patients under 40 years of age in the civilian series (Group B) in which the lumbar puncture was not followed by bed rest. In Group A, 345 patients all under 40 years of age who were rested in bed for at least 18 hours after puncture, a very low incidence of headache resulted. There does not appear to be any significant difference between the sexes in Group B in the incidence of headache.

Summary

The reported incidence of lumbar puncture headache when this procedure is not followed by any period of rest in bed varies considerably, but, on the whole, it appears to be in excess of 20 per cent.

The present series of 449 punctures shows 3.2 per cent. of headaches in 345 patients (all males under 40) when the lumbar puncture was followed by at least 18 hours of rest in bed. Altogether 104 patients of all age groups who resumed normal, or modified, activity after puncture showed a 17.3 per cent. incidence of headache.

On subdivision of this second group, the incidence of headache was 28.5 per cent. in those under 40 and 7.3 per cent. in those over 40 years of age. It is suggested that rest in bed be reconsidered as a means of reducing the incidence of post lumbar puncture headache and that, where any selection of patients is necessary, priority be given to those under 40 years of age.

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